Weekly Report for 2015/07/13-2015/07/19

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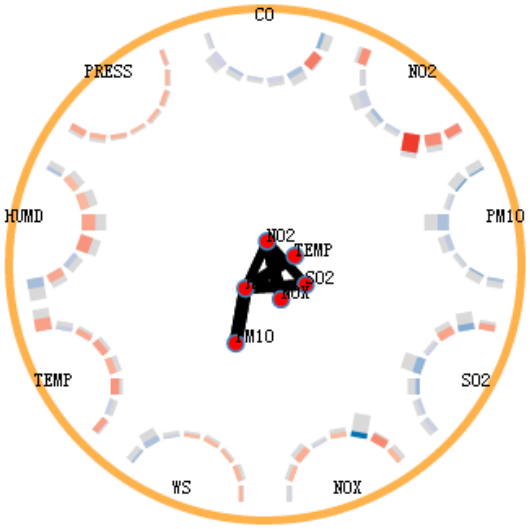
Progress

1. TCPTree Project



Figrue 1

I implemented the annotation map in the tree node.

2. Revise vis 2015 submission

3. Large Graph Visualization

1) Read the "A survey of two-dimensional graph layout techniques for information visualization"

I firstly find some papers about graph layout to read and I find this survey which is published in 2013. In this survey, a useful table is given to summary the graph drawing algorithms. According to the table, I think HDE, Walshaw, GRIP, FM^3, Hu, and OpenOrd are worth to try because all of them can layout graphs with more than 10000 nodes.

2) Test GRIP and OpenOrd

I and Lin Tao searched the source code of the previous mentioned algorithm and other GPU-based algorithm.

We find the source code of GRIP and OpenOrd. The authors of GRIP state that to their best knowledge, GRIP is the fastest graph layout algorithm. OpenOrd has a parallel solution. We firstly

tested these two algorithms.

GRIP

Test data: 2529 nodes, 86979 edges

Linux, laptop, layout time: 3 secs

Test data: 2851 nodes, 15093 edges

Linux, virtual machine, layout time: 0.74 secs

OpenOrd

Performance is not good as GRIP, even it is running in multithread version.

3) Read the requirements document from Huawei

Huawei has sent the requirement documents to us and I have read the requirement documents carefully.

The requirement has two parts: 1, relation graph visualization; 2, data mining result visualization.

For the first part, it is actually an ego network. The layout of ego network is much easier than a normal graph because the nodes can be separated into different levels according to the distance between a neighbor node and the ego node. A radial layout can then be utilized to layout the node with the same level, as shown in Figrue 2.

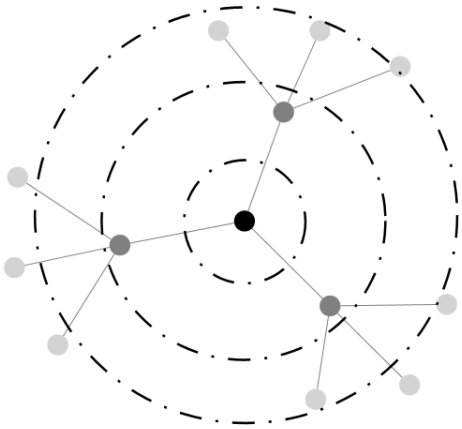


Figure 2

Plan

1. TCPTree Project

Finish variable tree.

Finish the control panel and other interactions.

2. Revise vis2015 submission

3. Large Graph

Make the plan of this project and run the project.